Abstracts

An Improved Equivalent Circuit for the Thin-Film Lumped-Element Circulator

R.H. Knerr. "An Improved Equivalent Circuit for the Thin-Film Lumped-Element Circulator." 1972 Transactions on Microwave Theory and Techniques 20.7 (Jul. 1972 [T-MTT]): 446-452.

A program written for the Hewlett-Packard automatic network analyzer permits the S-parameter eigenvalue phases and magnitudes to be displayed. The thus measured eigenvalues of a lumped-element circulator lead to an improved equivalent circuit which explains the observed "double hump" characteristic. The influence of different circuit parameters on the eigenvalues is measured and found in good agreement with the author's previously published theory. It is concluded from this theory and the measurements that, for the lossy circulator in general, maximum isolation, return loss, and minimum forward loss do not occur at the same frequency.

❑ Return to main document.